

Advances in Mobility Management for IP Networks

Editors:

Aisha Hassan Abdalla Hashim

Othman Khalifa

Shihab A. Hameed



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MIPV6 BASED APPROACHES FOR MOBILITY MANAGEMENT

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6.1 INTRODUCTION

Reviews of related mobile IPV6 based approaches for mobility management in mobile multicast. Identify the shortcomings that need to be addressed in order to cater the needs of seamless handover inmobile IPv6Existing mobility management specifications do not provide an effective method to support mobile multicast services and the schemes are not generally accepted by Jian Feng Guan, Hong Ke Zhang, De Yun Gao, Hua Chun Zhou and Ya Juan Qin [1].

The challenges of mobile multicast is the reconstruction of the multicast tree as the Mobile Node (MN) transfer to a new network. The MN will be receiving the multicast data in old network, although it moves to new network and the cost associated with tree construction is high.

As the mobile nodes handover to another network, the MN suffers from packet loss and joins delay. In case the foreign network does not support the multicast, all the multicast traffic will be rejected. As long as tunnel used, the process of encapsulation and decapsulation must take place which I turn increase the size of the header and therefore increase the cost. Packet out of order, and packet duplication, when receive different multicast data from different multicast router.

6.2 MIPV6 BASED APPROACHES

Mobile IP (MIP) based for mobile multicast solutions include MIPv6 variants extensions, and Multicast Listener Discovery (MLD) extensions. These extensions usually put the multicast information in signaling or transfer MLD state among access routers (ARs) to reduce the re-join delay and realize optimal multicast packets transmission [2].

The fundamental approach to deal with mobility in IPv6 is stated in RFC 3775 [3]. Most mobile multicast schemes extend the MIPv6 to carry the multicast information in signaling. In basic MIPv6, Bi-directional Tunnelling (BT) method transmits the MLD messages and multicast packets through the unicast tunnel. MIPv6 is designed to support unicast communication by caching the binding between Home Agent (HoA) and Corresponding Agent (CoA) of MN, and route the packets addressed to HoA to CoA transparently.

As for the multicast data, MIPv6 only roughly treats multicast mobility using two basic methods, Bi-directional Tunnel (BT) or Remote Subscribe (RS). David B, Johnson,